

TP

BRIEF SUMMARY OF THE INVENTION²

One technique for overcoming this difficulty is the development of a toggle bit MRAM. Such is described in U.S. Patent 6,545,906 B1, Savtchenko et al. In this case the MRAM is programmed by applying two timed magnetic signals so that the MRAM cell switches states regardless of its present state. A change from a logic one to a logic zero is achieved in the same way as a change from a logic zero to a logic one. This technique provides excellent consistency between the logic one state and the logic zero state. Because the toggling of logic states is achieved by controlling the magnetic field in a bit, it is current in the write lines that create magnetic fields that must be controlled.

Thus there is a need for write drivers for MRAMs that provide effective current control while also taking into account the normal desire of circuit design of small size. Thus a write driver that provides both small size and effective current control is desirable.

15

BRIEF DESCRIPTION OF THE DRAWINGS

The foregoing and further and more specific objects and advantages of the instant invention will become readily apparent to those skilled in the art from the following detailed description of a preferred embodiment thereof taken in conjunction with the following drawings:

FIG. 1 is a block diagram of a memory according one embodiment of the invention;

FIG. 2 is a combination block diagram and circuit diagram of a portion of the memory of FIG.1 according to a first implementation;